CLAIMS

1. An ultrasonic picture processing method comprising the steps of:

extracting contour information of a target from ultrasonic moving picture information;

sampling said contour information at preset time intervals and generating a plurality of time series contour data; and

comparing each of said contour data with other contour data and outputting comparison results.

2. An ultrasonic picture processing method comprising the steps of:

extracting contour information of a target from ultrasonic moving picture information;

sampling said contour information at a preset time interval and generating a plurality of time series contour data; and

comparing each of said contour data with adjacent one of said contour data and making a predetermined determination of ultrasonic moving pictures based on comparison results.

3. An ultrasonic picture processing method according to claim 2, wherein said sampling step is for sampling said contour information at the preset time interval and for generating said contour data representing an average value of movements of contours corresponding to a plurality of frames.

4. An ultrasonic picture processing method according to claim 2, wherein said comparison step is for comparing each of said contour data with a reference value and for determining whether said contour data is optimum.

5. An ultrasonic picture processing method according to claim 2, wherein said contour extraction step is for extracting cardiac wall contours from heart moving picture information as said ultrasonic moving picture information and for generating contour information.

6. An ultrasonic picture processing method according to claim 5, wherein said sampling step includes sampling said contour information corresponding to said cardiac wall contours at a time interval corresponding to heartbeats and for generating a plurality of contour data representing an average value of movements of cardiac wall contours corresponding to a plurality of frames.

7. An ultrasonic picture processing method according to claim 2, wherein said contour extraction step includes dividing a target contour from said ultrasonic moving picture information into a plurality of regions and for generating a plurality of pieces of division contour information, and said sampling step includes sampling said divided contour information at the time interval, for generating a plurality of time

series contour data for every divided contour information.

8. An ultrasonic picture processing method according to claim 7, wherein said contour extraction step includes extracting a cardiac wall contour from heart moving picture information as said ultrasonic moving picture information and dividing it into a plurality of regions for generating the divided contour information.

9. An ultrasonic picture processing method according to claim 8, wherein said sampling step includes sampling said divided contour information corresponding to respective divided regions of said cardiac wall contour at a time interval corresponding to heartbeats for generating a plurality of contour data representing an average value of movements of divided cardiac wall contours corresponding to a plurality of frames.

10. An ultrasonic picture processing method according to claim 2, including a step of recording moving pictures corresponding to the contour data which have been determined as optimum by said determination step.

11. An ultrasonic picture processing method comprising the steps of:

extracting a region of a target from ultrasonic moving picture information and generating target region

information;

sampling said target region information at a preset time interval for generating a plurality of time series region data; and

comparing each of said region data with adjacent one of said region data for outputting comparison results.

12. An ultrasonic picture processing method according to claim 11, wherein said sampling step includes sampling said region information at said preset time interval and generating said region data representing an average value of region movements corresponding to a plurality of frames.

13. An ultrasonic picture processing method according to claim 11, wherein said comparison step includes comparing each of said region data with a reference value for determining whether said region data is optimum.

14. An ultrasonic picture processing method according to claim 11, wherein said region extraction step includes extracting a cardiac muscle from heart moving picture information as said ultrasonic moving picture information for generating region information.

15. An ultrasonic picture processing method according to claim 14, wherein said sampling step includes sampling said region information corresponding to said cardiac muscle at a time interval corresponding

to heartbeats and generating a plurality of region data representing an average value of movements of the cardiac muscle corresponding to a plurality of frames.

16. An ultrasonic picture processing method according to claim 11, wherein said region extraction step includes dividing the target region from said ultrasonic moving picture information into a plurality of regions for generating a plurality of pieces of divided region information, and said sampling step includes sampling said divided contour information at said time interval for generating a plurality of time series region data for every divided region information.

17. An ultrasonic picture processing method according to claim 16, wherein said region extraction step includes extracting the cardiac muscle from heart moving picture information as said ultrasonic moving picture information and dividing it into a plurality of regions for generating said divided region information.

18. An ultrasonic picture processing method according to claim 17, wherein said sampling step includes sampling each of said divided region information corresponding to respective divided regions of said cardiac muscle at a time interval corresponding to heartbeats, for generating a plurality of region data representing an average value of movements of divided cardiac muscle regions corresponding to a plurality of frames.

19. An ultrasonic picture processing method according to claim 11, including a step of recording moving pictures corresponding to the contour data which have been determined as optimum by said determination step.

20. An ultrasonic picture processing method comprising the steps of:

extracting characteristic parts around a target from ultrasonic moving picture information and generating characteristic part information;

sampling said characteristic part information at a preset time interval for generating a plurality of time series characteristic part data; and

comparing each of said characteristic part data with adjacent one of the characteristic data for outputting comparison results.

21. An ultrasonic picture processing method comprising the steps of:

extracting an arbitrary concerned region of a target from ultrasonic moving picture information and generating concerned region information;

sampling said concerned region information at a preset time interval for generating a plurality of time series region data; and

comparing each of said concerned region data with adjacent one of the concerned region data for outputting comparison results.

22. An ultrasonic picture processing apparatus comprising:

a contour extraction section for extracting contour information about a target from ultrasonic moving picture information;

a sampling section for sampling said contour information at a preset time interval for generating a plurality of time series contour data; and

a comparator for comparing each of said contour data with adjacent one of the contour data for making a predetermined determination of said ultrasonic moving pictures based on comparison results.

23. An ultrasonic picture processing apparatus according to claim 22, wherein said sampling section samples said contour information at said preset time intervals and generates said contour data representing an average value of movements of contours corresponding to a plurality of frames.

24. An ultrasonic picture processing apparatus according to claim 22, wherein said comparator compares each of said contour data with a reference value and determines whether the data is optimum.

25. An ultrasonic picture processing apparatus according to claim 22, wherein said contour extraction section extracts a contour of a cardiac wall from heart moving picture information as said ultrasonic moving picture information and generates contour information.

26. An ultrasonic picture processing apparatus according to claim 25, wherein said sampling section includes a heart rate measurement unit for measuring a heart rate and said sampling section samples said contour information corresponding to said cardiac wall contour at a time interval corresponding to heartbeats and generates a plurality of contour data representing an average value of movements of cardiac wall contours corresponding to a plurality of frames.

27. An ultrasonic picture processing apparatus according to claim 22, wherein said contour extraction section divides contours of the target from said ultrasonic moving picture information into a plurality of regions and generates a plurality of divided contour information; and said sampling section samples said divided contour information at said preset time interval and generates a plurality of time series contour data for respective divided contour information.

28. An ultrasonic picture processing apparatus according to claim 27, wherein said contour extraction section extracts a contour of the cardiac wall from heart moving picture information as said ultrasonic moving picture information and divides it into a plurality of regions to generate said divided contour information.

29. An ultrasonic picture processing apparatus according to claim 28, wherein said sampling section

interval and generates said region data representing an average value of region movements corresponding to a plurality of frames.

33. An ultrasonic picture processing apparatus according to claim 31, wherein said comparator compares said region data with a reference value and determines whether the region data is optimum on the basis of comparison result.

34. An ultrasonic picture processing apparatus according to claim 31, wherein said region extraction section extracts a cardiac muscle from heart moving picture information as said ultrasonic moving picture information, and generates region information.

35. An ultrasonic picture processing apparatus according to claim 34, wherein said sampling section includes a heart rate measurement unit for measuring a heart rate and a sampling circuit for sampling said region information corresponding to said cardiac muscle at a time interval corresponding to heartbeats and generating a plurality of region data representing an average value of movements of the cardiac muscle corresponding to a plurality of frames.

36. An ultrasonic picture processing apparatus according to claim 31, wherein said region extraction section divides the region of the target from said ultrasonic moving picture information into a plurality of regions and generates a plurality of divided region

includes a heart rate measurement unit for measuring a heart rate and said sampling section samples said divided contour information corresponding to divided regions of said cardiac wall contours at a time interval corresponding to heartbeats and generates a plurality of contour data representing an average value of movements of divided cardiac wall contours corresponding to a plurality of frames.

30. An ultrasonic picture processing apparatus according to claim 22, further comprising a recording section for recording moving pictures corresponding to the contour data which have been determined as optimum by said comparator.

31. An ultrasonic picture processing apparatus comprising:

a region extraction section for extracting a region of a target from ultrasonic moving picture information and generating target region information;

a sampling section for sampling said target region information at a preset time interval for generating a plurality of time series region data; and

a comparator for comparing each of said region data with adjacent one of the region data for outputting comparison results.

32. An ultrasonic picture processing apparatus according to claim 31, wherein said sampling section samples said region information at said preset time

information, and said sampling section samples said divided region information at said time interval, and generates a plurality of time series region data for respective divided region information.

37. An ultrasonic picture processing apparatus according to claim 36, wherein said region extraction section extracts a cardiac muscle from heart moving picture information as said ultrasonic moving picture information and divides it into a plurality of regions for generating said divided region information.

38. An ultrasonic picture processing apparatus according to claim 37, wherein said sampling section includes a heart rate measurement unit for measuring a heart rate and a sampling circuit for sampling said divided region information corresponding to divided regions of said cardiac muscle at a time interval corresponding to heartbeats for generating a plurality of region data representing an average value of movements of divided cardiac muscle regions corresponding to a plurality of frames.

39. An ultrasonic picture processing apparatus according to claim 31, comprising means for recording moving pictures corresponding to the contour data which have been determined as optimum by said comparator.